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09/829,363	04/09/2001	Hiroto Ohkawara	B208-923 DIV I	1243

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ROBIN, BLECKER & DALEY
330 Madison Avenue
New York, NY 10017

EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/829,363

Applicant(s)

OHKAWARA, HIROTO

Examiner

LUONG T NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-19, 26-30 and 37-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 28 is/are allowed.
- 6) ☒ Claim(s) 15, 19, 26, 30 and 37-39 is/are rejected.
- 7) ☒ Claim(s) 16, 27 and 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/982,160.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 08/982,160, filed on 12/01/1997.

Drawings

2. Figure 2-5, 6(A)-6(B), 7-8 and 12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

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On page 28, line 27, "motor 102" should be changed to --motor 117--.

On page 30, lines 21-22, the disclosure discloses that figure 12 shows a data table of cam locus information of figure 3; figure 3 is prior art as disclosed on pages 2-3. Therefore, the examiner considers figure 12 is also prior art. However, on page 24, lines 7-8, the disclosure discloses figure 12 is a data table of cam locus information according to the first embodiment. This is contrary to the disclosure of figure 12 on page 30.

Appropriate correction is required.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

AN IMAGE PICKUP APPARATUS WITH FOCUSING LENS CONTROL DEVICE.

Claim Objections

5. Claim 38 is objected to because of the following informalities:

Claim 38 cannot depend on itself; the examiner considers that claim 38 depends on independent claim 37. Therefore, in claim 38 (line 1), "claim 38" should be changed to --claim 37--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 15, 19, 26, 30, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi (U. S. Patent No. 5,212,598) in view of Applicant's conceded Prior Art, Figures 7-8, Specification, pages 2-18).

Regarding claim 15, Kikuchi discloses a lens control apparatus comprising a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) which is movable along an optical axis for performing focus adjustment; an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) for driving said movable part; position-of-movable-part detecting means (focusing position detector 7, Figures 1A-1B, Column 2, Line 67 – Column 3, Line 2) for detecting a position of said movable part; focus control means (combination of optical detector 13 and system controller 14, Figures 1A-1B, Column 3, Lines 40-61) for determining a state of focus (optical detector 13 forms an AF detection signal for automatic focusing) and supplying a driving signal (system controller 14 supplies a driving signal to focusing driving motor 6) which causes said movable part to move toward an in-focus position, according to the determined state of focus.

Kikuchi fails to disclose a position control means for performing position control of said movable part via said actuator by updating the driving signal by a plurality of times during a

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predetermined time period so that an average moving speed of said movable part during the predetermined time period becomes a predetermined speed. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period (updating the driving signal plurality of times during a predetermined time period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 19, the Applicant's conceded Prior Art discloses the predetermined speed varies according to the determined state of focus (the standard moving speed of the focusing lens required to keep an in-focus state, Specification, page 5, lines 22-25).

Regarding claim 26, Kikuchi discloses a method of controlling an image pickup apparatus, comprising the steps of causing an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) to move a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) along an optical axis defined by a lens (focusing lens F4) and an image pickup element (CCD 8, Figures 1A-1B), said movable part being either one of the lens and the image pickup element; determining a state of focus ((optical detector 13 forms an AF detection signal for automatic focusing, Figures 1A-1B, Column 3, Lines 40-50); and performing position control of said movable part so that said movable part moves toward an in-focus position, according to

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the determined state of focus (system controller 14 supplies a driving signal to the focusing driving motor 6, Figures 1A-1B, Column 3, Lines 56-61).

Kikuchi fails to disclose a driving signal for moving said movable part being given to said actuator while being updated by a plurality of times during a predetermined time period so that an average moving speed of said movable part during the predetermined time period becomes a predetermined speed. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period (a driving signal being updated by a plurality of times during a predetermined time period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 30, the Applicant's conceded Prior Art discloses the predetermined speed varies according to the determined state of focus (the standard moving speed of the focusing lens required to keep an in-focus state, Specification, page 5, lines 22-25).

Regarding claim 37, Kikuchi discloses a lens control apparatus comprising a movable part (focusing lens F4, Figures 1A-1B, 2, Column 2, Lines 55-68) which is movable along an optical axis for performing focus adjustment; an actuator (focus driving motor 6, Figures 1A-1B, Column 2, Lines 55-68) for driving said movable part; position-of-movable-part detecting means (focusing position detector 7, Figures 1A-1B, Column 2, Line 67 – Column 3, Line 2) for

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detecting a position of said movable part; focus control means (combination of optical detector 13 and system controller 14, Figures 1A-1B, Column 3, Lines 40-61) for determining a state of focus (optical detector 13 forms an AF detection signal for automatic focusing) and supplying a driving signal (system controller 14 supplies a driving signal to focusing driving motor 6) which causes said movable part to move toward an in-focus position, according to the determined state of focus.

Kikuchi fails to disclose a position control means for performing position control of said movable part via said actuator by updating the driving signal by a plurality of times during a predetermined time period so that an average moving speed of said movable part during the predetermined time period becomes a predetermined speed. However, the Applicant's conceded Prior Art, Figures 7-8, Specification, pages 14-16, discloses that the standard moving speed of the focusing lens is calculated by a plurality of times during one vertical synchronizing period (updating the driving signal plurality of times during a predetermined time period). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kikuchi by the teaching of the Applicant's conceded Prior Art in order to prevent the occurrence of defocusing (Specification, page 14, lines 1-6).

Regarding claim 38, Kikuchi discloses the actuator is linear motor (linear motor, Column 1, Lines 19-20).

Regarding claim 39, Kikuchi discloses image pickup means (CCD image pickup device 8, Figures 1A-1B, Column 3, Lines 25-30); said focus control means determining the state of

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focus by extracting a predetermined focus signal which varies according to the state of focus, from a picked-up image signal outputted from said image pickup means (optical detector 13 extract a predetermined focus signal from image signal output from CCD 8, Figures 1A-1B, Column 3, Lines 40-61).

Allowable Subject Matter

8. Claims 17-19/17, 28-30/28 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 17, the prior art of the record fails to show or fairly suggest an image pickup apparatus comprising focus control means, said focus control means including first control means for calculating a target position to which said movable part is made to move, on a first control cycle according to the signal level of the focus voltage signal extracted by said extracting means; and second control means for updating the driving signal to be supplied to said actuator, on a second control cycle, said second control means executing updating of the driving signal on the second control cycle so that an average moving speed at which said movable part continues to move until said movable part reaches the target position calculated by said first control means becomes a predetermined speed, as well as so that said movable part gradually approaches the target position until said movable part reaches the target position.

Claims 18 and 19/17 are allowable for the reason given in claim 17.

Regarding claim 28, the prior art of the record fails to show or fairly suggest a method of controlling an image pickup apparatus, comprising the steps of performing position control of said movable part so that said movable part moves toward an in-focus position, according to the determined state of focus, a target position to which said movable part is made to move according to the signal level of the focus voltage signal being calculated on a first control cycle, and the driving signal to be given to said actuator being updated on a second control cycle so that an average moving speed at which said movable part continues to move until said movable part reaches the calculated target position becomes a predetermined speed, as well as so that said movable part gradually approaches the target position until said movable part reaches the target position.

Claims 29 and 30/28 are allowable for the reason given in claim 28.

9. Claims 16, 27, 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 16, 40, the prior art of the record fails to show or fairly suggest a lens control apparatus, wherein said position control means updates a target position n times during the predetermined time period by an amount of movement, s/n , at a time with respect to an amount of movement, s , by which said movable part moves at the predetermined speed, and uses a driving signal corresponding to the updated target position as the driving signal to be supplied to said linear motor by said focus control means.

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Regarding claim 27, the prior art of the record fails to show or fairly suggest a method of controlling an image pickup apparatus, wherein the driving signal which is given to said linear motor while a target position is being updated n times during the predetermined time period by an amount of movement, s/n , at a time with respect to an amount of movement, s , by which said movable part moves at the predetermined speed is used as a driving signal corresponding to the updated target position.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirasawa (U. S. Patent No. 5,287,223) discloses lens drive controlling apparatus.

Hirasawa (U. S. Patent No. 5,323,200) discloses optical apparatus having lens control device.

Iijima et al. (U. S. Patent No. 5,587,842) discloses lens control system.

Hirasawa et al. (U. S. Patent No. 5,949,586) discloses lens control device.

Kaneda (U. S. Patent No. 6,184,931) discloses image pickup device with focusing control.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T NGUYEN whose telephone number is (703) 308-9297 or (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929 or (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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03/20/05



LUONG T. NGUYEN
PATENT EXAMINER